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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/632,900

08/04/2003

Yoshito Mizoguchi

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12/09/2004

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EXAMINER

DUDDING, ALFRED E

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 12/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/632,900

Applicant(s)

MIZOGUCHI ET AL.

Examiner

Alfred E. Dudding

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/5/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
 - a. page 16, line 25, change "B312" to - -B132- - to comply with the drawings
 - b. page 21, line 26, change B40closable to - -B40 closable- -.

Appropriate correction is required.

Claim Objections

2. Claims 1 and 6 are objected to because of the following informalities:
 - a. claim 1, line 11, delete "assuming that"
 - b. claim 6, line 25, delete "assuming that"

The phrase "assuming that" makes the claims argumentative and not assertative.

- c. claim 1, line 23, change "1.20" to - -1.20 . - -
 - d. claim 6, line10, change "1.20" to - -1.20 . - -.

Appropriate correction is required.

Allowable Subject Matter

3. Claims 1 – 7 are allowed.
4. The following is an examiner's statement of reasons for allowance:
 - a. The primary reason for the allowance of claims 1 – 5 is the inclusion of the limitation of an ink jet recording apparatus comprising a main-tank for storing ink and a sub-tank wherein the maximum amount of ink capable of being stored in said sub-tank is represented by A, an

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amount of residual ink remaining in said sub-tank after the ink has been discharged by said ink discharge means is represented by "a", a ratio by weight of a volatile component in the ink used is represented by B and a ratio of a colorant concentration of the ink at saturated state by repeating the ink supply and the ink discharge, to an initial colorant concentration of the ink is represented by R, the A, the "a" and the B is set so as to satisfy the following equation:

$$A / (A - a \times B) = R \leq 1.20 .$$

It is this limitation found in each of the claims, as it is claimed in the combination, that has not been found, taught, or suggested by the prior art of record which makes these claims allowable over the prior art.

b. The primary reason for the allowance of claims 6 and 7 is the inclusion of the limitation of an ink storage container that the maximum amount of ink capable of being stored therein is represented by A, an amount of residual ink remaining therein after the stored ink has been discharged is represented by "a", a ratio by weight of a volatile component in a composition of ink used is represented by B and a ratio of a colorant concentration of ink at saturated state made by repeating ink supply and ink discharge, to an initial colorant concentration of said ink is represented by R, said ink storage container is formed to have the amount "a" of residual ink and the maximum amount A of ink satisfying the following equation:

$$A / (A - a \times B) = R \leq 1.20 .$$

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

a. Koyano et al. (U.S. 6,786,588 B2) disclose a ratio of a colorant concentration of the ink at saturated state by repeating the ink supply and the ink discharge, to an initial colorant concentration of the ink is represented is 1.25 (1/80%), claim 1. Koyano et al. fail to teach the claimed invention of an ink storage container that the maximum amount of ink capable of being stored therein is represented by A, an amount of residual ink remaining therein after the stored ink has been discharged is represented by "a", a ratio by weight of a volatile component in a composition of ink used is represented by B and a ratio of a colorant concentration of ink at saturated state made by repeating ink supply and ink discharge, to an initial colorant concentration of said ink is represented by R, said ink storage container is formed to have the amount "a" of residual ink and the maximum amount A of ink satisfying the following equation:

$$A / (A - a \times B) = R \leq 1.20 .$$

6. This application is in condition for allowance except for the following formal matters: correction of the specification and of claims 1 and 6..


Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alfred Dudding whose telephone number is (571) 272-2144. The examiner can normally be reached on Monday-Friday from 7:00 AM to 3:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier, AU 2853, can be reached at (571) 272 - 2149. The fax phone number for this Group is are (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (703) 308-0956.



Stephen D. Meier
Primary Examiner

Alfred Dudding



3 December 2004